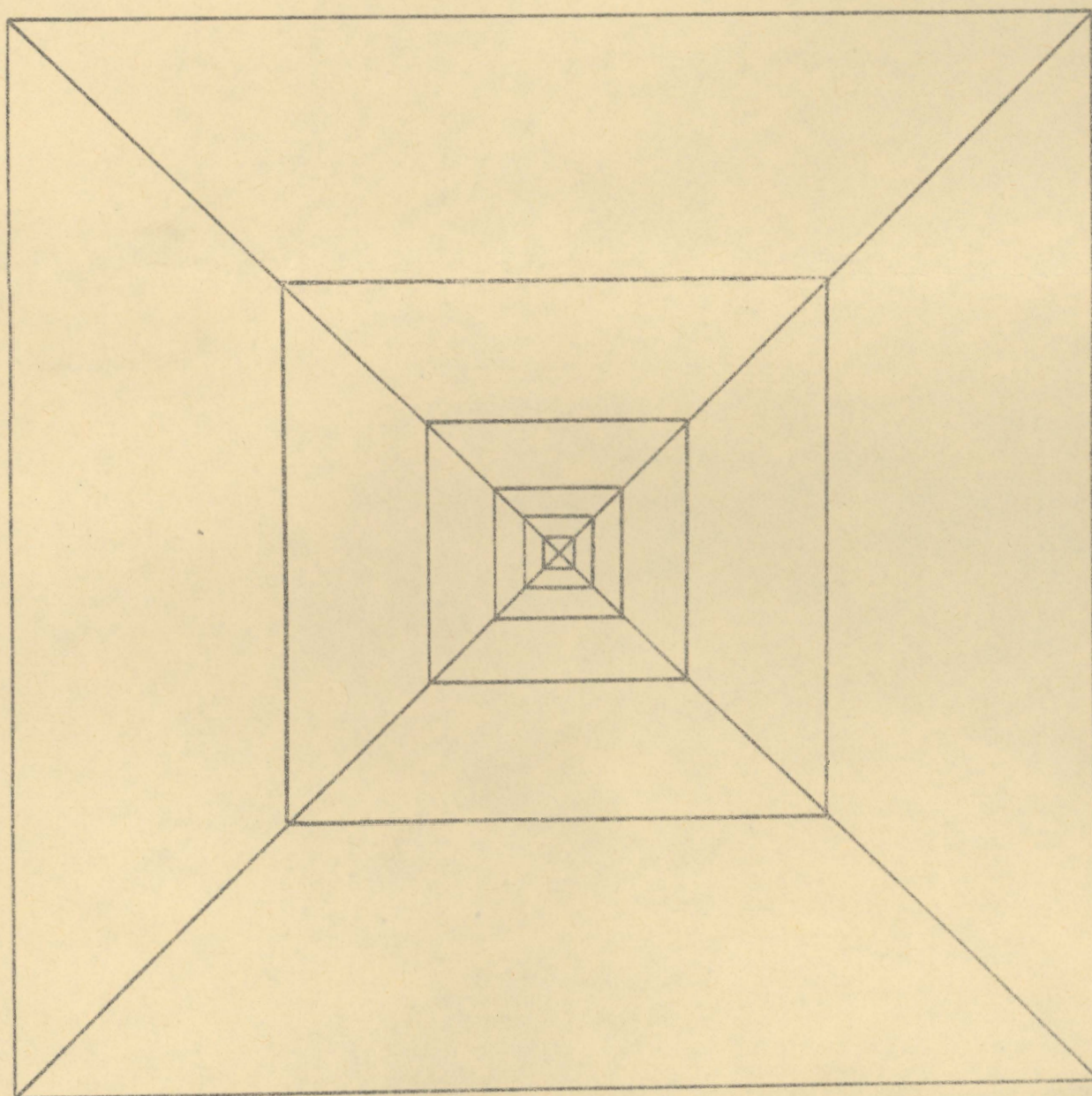


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Editorial

by H. Griesberg & K. Basterfield.

The last section of our previous editorial drew comment as to precisely what did we mean by the statement: "....,and above all, are not personal attacks on any individual. There is no room for American style "ufology" in our Australian ranks."

By this, taken in context with the rest of the editorial, we meant that we believe that reasoned debate on the UFO subject can and should be conducted without recourse to personal attacks on the character of an individual. One should concentrate on the reasoning and logic of a person's argument or hypothesis and not on the individual themselves.

This open debate on the pro's and con's of anyone's ideas should involve the perusal and discussion on the work of all and any researcher of whatever nationality or thought.

Our reference to 'American style "ufology"' was an unfortunate choice of words, but was an honest reflection on a recent trend by such people as Klass in the USA to choose to conduct attacks on individuals, when they (debunkers) are unable to shake the factual evidence being presented. Please let's keep our debate on a professional level.

UFOCON 6.

We wish to thank all those people who attended the sixth annual UFO conference in Adelaide between 10-12 October. The event produced some very interesting papers and some lively discussions on a large range of topics. Our special thanks to members of UFO Research (SA) for their help in the organisation of the conference.

Spare copies of the proceedings are available from ACUFOS at a cost of \$15 (Australian) which includes packaging and surface postage. The proceedings contain 10 of the papers (in full) which were presented, and are spiral bound.

From Plausibility to Proof: The Science of UFO Prediction.

by John Prytz.

In the latter part of 1980, I was requested by the Department of the (Commonwealth) Parliamentary Library (where I work), to represent the Library in a phase-1 joint Parliamentary study of the information needs of Parliament through 1988/89. This study was part and parcel of the planning needed for the New and Permanent House of Parliament, the construction of which is now beginning. Forecasts were needed for the funds, manpower and equipment needed to cater for those information needs of the five Parliamentary Departments (House of Representatives, Senate, Joint House, Hansard and of course the Library) and of course the Parliamentarians and Parliamentary Committees they serve.

Although it was easy enough (in the Library's case) to take past demand for information trends and extrapolate them a decade ahead, this had obviously pitfalls in that it didn't allow for various factors of a likely nature (i.e. a doubling of Parliamentary research assistants in 1983) that could occur between now and 1988/89, and which, if introduced, could have a major impact on the forecast. It would be a straight "the past is the key to the future" exercise. So...

If we wished to generate various possible scenarios; play a "what if?" game that had a bit of meaning in it, we had to know what generated the past demand on Library services. What was the driving force?

We couldn't prove there was a direct cause/effect relationship between the past demand for Library information (the dependent variable) and some other factor(s) (the independent variable(s)), but we could determine mathematically the degree of correlation. A high degree of correlation would be suggestive of causality and useful in forecasting.

By playing around with the likely futures of those independent variables (if any), we would generate a more accurate and convincing forecast for the dependent variable (demand for information). We first had to try and figure out what could be the driving force; what could be logically correlated with the basic historical and statistical trend for Library services. I considered for example:

- 1) The number of "crisis" per year.
 - 2) The number of hours of Parliamentary sitting per year.
 - 3) The number and proximity of Parliamentary research assistants or staff.
 - 4) The number of actual Library services (on the theory that the greater the number of services, the greater the demand).
 - 5) The number of "bits" of information published/broadcast per year.
 - 6) The size of the Government's majority (that is whether the Parliament was an "active" or "passive" one).
 - 7) The occurrence of Federal and/or State elections.
 - 8) The degree of technological improvements introduced to existing services.
- as being Library demand generators which could be correlated with, even if not in a causality sense, the base trend of the dependent variable.

The historical trend (obtained from Library statistical records) of the dependent variable was matched with the historical trends of the various independent variables (alone and in combination). Given the order of magnitude of that job, we had to seek out the assistance of the "new technology". We fed the data into CSA's (Computer Sciences of Australia) FLARES (Financial Analysis and Reporting System) software program, and the data went via cable to CSA's computer complex in Sydney where the number crunching took place. The return of any highly positive correlations between any independent variable(s) and the dependent variable (to a degree of .9 or more) then suggested which of the independent variables we could play around with in our scenariogeneration (some of which were easier to guesstimate than others - how do you forecast number of crisis per year?). Once that was accomplished, the forecasted numbers for the independent variable(s) were fed back into CSA's hardware and software; more number crunching took place; and the printout then told us the: a) extreme upper and lower limits of; b) most probable upper and lower limits of; and c) the most likely projection for the dependent variable, year by year, through 1988/89. As an extra bonus, the computer translated all of that into any combination of manpower/technology requirements for

the Library, and the equivalent costs in 1979/80 dollars! The figures for the Library (with the degree of correlation - the degree of certainty given that what we said would happen with the independent variable(s) would in fact happen) where combined with the figures for other Parliamentary Departments, and a combination report/briefing outlining the projections given to the Permanent Heads of the five Parliamentary Departments. They in turn will go to the Presiding Officers (the Speaker of the House of Representatives and the President of the Senate) who can go to those responsible officials for the New and Permanent Parliament House with the forecasts.

Obviously our forecast predictions are testable - in 1988/89! If we turn out to be way off the mark, then something clearly was wrong with either our historical cause/effect assumptions (or lack of them) and/or our scenario generation assumptions. Regardless, our analysis of the situation is testable (and if it doesn't pan out I don't want to be around to know about it)!

So what does the above (by way of a very lengthy introduction) have to do with UFOs? In theory, everything, for it suggests a tool by which:

- 1) Past UFO trends can be forecasted into the future to "X" degree of precision depending upon how well the past trend being forecasted fits various mathematical equations.
- 2) Past UFO trends can be correlated to "X" degree of precision with any of dozens of possible independent variable trends (in isolation or in combination - see below for some suggestions) which would suggest, either for or against, various possible cause/effect relationships.
- 3) Highly positive correlations between the past dependent (UFO) variable and independent variable(s) can be extrapolated into the future, in particular through the use of various speculative scenario generations for the independent variables, which of course yields....
- 4) Predictions of future UFO trends/behaviour which can be put to the test as ufological events unfold. And the testing of any scientific theory (which the above correlation would be), through prediction, is usually considered as the making or breaking of proof in a scientifically acceptable sense!

However, to accomplish any or all of the above by pen and paper would be one heck of a mind-boggling, time-consuming, and probably boring task. Hence the need for computer hardware and software. Before discussing the various possible categories of independent variables, it should be pointed out that the dependent variable (the UFO) can be forecasted (in isolation or through correlations) depending upon the interest(s) of the individual ufologist, where the only limiting factor is the availability of statistically meaningful data. That is, one could "predict" such things as:

- 1) Number of UFO reports world-wide per year (highly general), or
- 2) Number of on-duty policemen who report a sighting of a UFO on the ground, coupled with two or more occupants, and where EM effects are noted, between the hours of 0330 and 0600, within a radius of 50 KM of Parkes, N.S.W., and where the object and/or occupants were in view at least 30 minutes (highly specific).

Anyway, I have suggested in an earlier paper (Prytz, John - "An Approach to the UFO Maze: Philosophy Based on Clarke's 3rd Law" - UFO RESEARCH AUSTRALIA NEWSLETTER - Jan./Feb. 1981 - p. 23-29.) that there could be up to nine "causes" for the majority of UFO reports, which could be grouped into three broad divisions: Physical Phenomena; Mental Phenomena, and; Technological Phenomena. Because UFO reports/cases result from UFO witnesses (regardless whether this is during or after the fact, naked eye or technology assisted, the human element is eventually involved), it is important to relate the relative impact of the above three groupings upon the unsuspecting human witness.

The broad category of "physical Phenomena" (which includes both natural and artificial (but manmade) phenomena) is for the most part external and impersonal to the UFO witness.

The broad category of "Mental Phenomena" (which includes things like psychic, religious, psychological and sociological phenomena, as well as hoaxes, being "under the influence", etc.) is for the most part internal and personal to the UFO witness.

The broad category of "Technical Phenomena" (which includes anything of a "nuts and bolts" nature, whether terrestrial or extraterrestrial) is construed to be totally outside of any frame of reference the witness can imagine; alien to the day-in, day-out affairs and experiences of the average man-in-the-street.

Can the dependent variable (the UFO) be correlated with any specific independent variable(s) that fall within the framework of any of the above three broad "causes" for the UFO? If so, or if not, what are the implications?

But firstly, what independent variable(s), can interact with, hence be correlated with, the average human population, to produce UFO witnesses, hence UFO reports/cases?

In the case of "Physical Phenomena", attempted correlations could include such independent variables as: sunspot number and intensity; lunar cycles; the apparent magnitude of Venus; the oppositions (or conjunctions) of Mars; meteor sightings; satellite launchings; balloon launchings; atmospheric nuclear tests; satellite re-entries; and, any number of specific weather patterns.

In the case of "Mental Phenomena", UFOs (As the dependent variable) could be compared with trends in such things as: Stress (as measured by: rates of divorce, crime, suicide, unemployment, drug abuse, inflation, etc., or degree of world instability (ie: wars and rumors of wars)); changes in age and composition of human population; media influences (ie: UFO and/or space publicity); degree of interest in the paranormal (as measured perhaps by not only number of media or publication references, but by the number of astrology columns published; degree of church attendance recorded; or, number of religious cults formed); the political situation (measured via the composition and majority of the Government; the proximity of an election; the popularity of a political leader and/or Government, etc.) There is enough scope within the "Mental" area to keep even a computer busy for weeks!

Notice that the above suggested independent variables are known and measureable qualities. There would be little point (from the point of view of explanation) of using as independent variables other unknown (though measureable) qualities of human experience such as religious miracles and visions; disappearances within the Bermuda Triangle; sightings of monsters (Loch Ness, Bigfoot, etc.) or of ghosts etc. One cannot use one unexplained phenomena to explain another heretofore unexplained phenomena. Further, should UFOs be highly correlated with such other unexplained phenomena, and that unexplained phenomena be correlated with some (or none) other known physical or mental factor, then the middleman can be eliminated as the UFO should be directly correlated with that known factor (if $A \text{ equals } B \text{ equals } C$, then $A \text{ equals } C$).

Which brings up the case of "Technological Phenomena" where anything is of an unknown nature in terms of quality and quantity. It lies in the Never-Never Land outside of the realm of the average "John Doe" in terms of current understanding of the average world. It suggests a factor not only external and impersonal to "John Doe", but with a degree of intelligence behind it that makes any efforts on the part of "John Doe" to measure and predict it doomed to failure without cooperation of that intelligence (which could be terrestrial in terms of "secret weapons", or terrestrial in terms of "time travellers", or extraterrestrial) or an Act of God.

But before ufologists run off and invoke (other than as an act of faith or belief) any "Technological Phenomena" as a cause of the UFO phenomena, either zero correlations must be documented with any physical and/or mental phenomena, or else positive historical correlations, used to yield predictions, must fall flat as events come to pass.

In terms of assigning logical individual independent variables as possible factors which could be correlated with the UFO enigma, not to mention the possible permutations, computer assistance is a must (otherwise be prepared to work out mathematical equations till Hell freezes over)! For example, although neither the popularity of the Prime Minister, OR the number and intensity of sunspot activity, OR the number of astrology columns in the newspapers may by themselves yield a UFO correlation of greater than .5 (for say number of UFO cases in Australia per year), when taken together, they may yield a positive correlation of .9999! Whoknows? Even though the above example may border on the ridiculous, has anyone done the calculations? Has anyone really done anything

which shows a positive correlation between UFOs and some independent variable(s) which has been extrapolated into the future and tested?

Of course a .9999 historical correlation between UFOs and some other independent variable(s) would not prove causality. A highly successful prediction based on that positive correlation would go a long way towards doing so (one could of course "cheat" and use data through say 1970 to predict (in retrospect) 1980 - but a longer baseline of data (through 1980) to predict 1990 would be more meaningful).

But what if UFOs can not be historically correlated with any known and measureable independent variable(s)? Given that just about any reasonable/logical correlation test that is possible has been done, and that no correlation (to a degree of .75 or more) has been uncovered, then only one logical conclusion is left: the UFO phenomena (as a collective whole) (if that was what was tested), or a part of the UFO phenomena (ie: physical trace cases), is totally alien and external to any other known factor(s) we can think of... sort of like an extraterrestrial visitation would be!

But it is not enough to just forecast the base UFO historical trend - that suggests nothing. Historical correlations must be attempted to be discovered and if discovered, forecast into the future via scenario generation of the independent variable(s), hence tested. If the scenario generation of the independent variable(s) matches future reality, but the UFO does not - well that's another problem, but at least one or more cause/effect theories bit the dust as a result. If no historical correlations came to pass, then I propose that in itself is highly significant and revealing.

In conclusion, I therefore suggest that we have the ways and means (in terms of a statistically significant data base, mathematical tools, and computer technology) to put an end to pure theoretical speculations re: the UFO and the underlying cause(s) of the same. We should plan our attack (think up the logical independent variables that could be correlated with UFOs); look up and/or acquire the necessary data; feed the data (for both the dependent and independent variable(s)) in some computer system; punch the buttons; obtain our correlations; feed the computer again; obtain our predictions; (pay the computer bill!); test the predictions, and continue doing the above until such time as we say in a scientific sense that the UFO mystery is either solved, or unsolvable using all of the resources at our command.

The Australian Centre for UFO Studies - Investigation System.

by A.C.U.F.O.S.

In order to assist the published aim of ACUFOS in promoting UFO research in Australia, the Centre announced in November 1980 that it had created an ACUFOS investigation system to supplant the existing group structure in locations where either no member organisation exists or there are individuals who do not wish to join a UFO research organisation for personal reasons. The system commenced 1 January 1981.

Admission to the ACUFOS investigator status is by personal application to ACUFOS, P.O. Box 546 Gosford NSW 2250 on the prescribed form. A copy of the form may be obtained by writing to the Centre enclosing a stamped, self-addressed 20 by 10 cm envelope.

Admission will be restricted to:-

1. Individuals who are not currently members of an existing ACUFOS member organisation, unless that member organisation supports the application of the person, and
2. Persons who are able to show themselves capable of some worthwhile contribution to the study of the UFO phenomena, and
3. Who possess the ability to undertake the high quality investigation work expected from the ACUFOS investigation system.

An annual fee of \$30 will be charged. This fee will provide you with:

*Six issues of the "ACUFOS JOURNAL" which publishes research articles on various aspects of the phenomena, with particular emphasis on the work of Australian researchers.

*A year's subscription to the offset printed, 32 page an issue, illustrated "UFO Research-Australia-Newsletter" published by Vladimir Godic of Adelaide.

*A 10% discount on all ACUFOS produced publications.

*A copy of the monthly two page UBIX'd "ACUFOS Bulletin" which provides (only) the ACUFOS investigator with up to the minute news of events which will be subsequently followed up in either the "Newsletter" or the "Journal".

The above publications, Journal, Newsletter and Bulletin are currently worth a total of \$22 per annum if valued separately (the Bulletin is not available to public subscription). Some of the residue of the \$8, will be utilised for administration costs, however the bulk will go to the ACUFOS research fund for use by all Australian researchers.

So, for more information etc., contact us at P.O. Box 546 Gosford NSW 2250.

The Observation of Variable Stars

by Eric Harries-Harris

Reprinted from CRUX.

It is generally understood that to be a participant in major scientific research these days requires tertiary qualifications and access to multi-million dollar equipment, plus a full time commitment to that research.

This is largely true in most areas, and the serious amateur with access to professional bodies is rare. There is, however, one field in which this is not so, and it is open to anyone with the necessary interest and dedication. I refer to amateur astronomy and to that particular branch known as the study of variable stars.

Throughout the world, thousands of very ordinary men and women are nightly training their modest telescopes on these fascinating objects, writing up their data and sending it to organised bodies who produce a whole range of material in the form necessary for evaluation by professional observatories. Since there is a wide range of different types of variable star, so there are observers of varying skills who study one or another of them. Let us qualify the obvious and state that a variable star is one whose radiation output is not steady. In the most common case these variations are regular, or periodic and may be caused by any number of different phenomena. Eclipsing binaries in line of sight with the Earth are one such cause, their light fluctuations being strictly regular as one star eclipses another. Other stars vary intrinsically by a pulsation of their outer layers causing expansion and contraction of the diameter with consequent fluctuations in their radiation output and spectral lines. The periods of these stars could vary between such extremes as four to five hundred days, to a little under half an hour. The light intensity could vary from well below the threshold of any modest telescope to naked-eye visibility. Perhaps the most important of all, however, are stars known as "Dwarf Novae" or eruptive variables. These stars remain quiescent for indeterminate lengths of time and then, suddenly without warning, burst into brilliance, waning again over a period of days or weeks to their normal faintness. In this respect they resemble the more spectacular novae or supernovae except that these objects do not appear to have recurrent outbursts, whereas the "dwarf novae" do. The radiation output in the visible part of the spectrum of these stars is of a catastrophic nature and it can be accompanied by activity in other parts of the electromagnetic spectrum, particularly in the ultraviolet and X-ray. These emissions are studied through experiments carried on satellites equipped to monitor the radiation in those parts of the spectrum. It is often the function of the visual observer to monitor the selected stars in an attempt to witness the early rise of such outbursts, and to pass on the information quickly so that through international channels of communication, the earth satellite experiments can be activated.

Similar joint studies have been attempted in conjunction with radio astronomers on the possible connection between radio emissions and visible flares on certain stars.

Yet another type of variable star shines with constant light output for months or even years and then, unpredictably, fades in light output rapidly and returns slowly over many months to its former brilliance.

It is believed that these stars throw off a shell of carbon "soot" that obscures the visible radiations until dispersed in outer space.

Again, it remains the task of the variable star observer to do this monitoring. Thus, ordinary men and women at their modest instruments provide a wealth of data for those professionals who have neither the time available on their equipment, nor the manpower to do this work.

The visual observer is using his own judgment of the magnitude of any given star. He has a chart, (Supplied by a variable star section,) of the star under examination. Also on the chart is a series of comparison stars, the magnitudes of which have been supplied, usually by professional observatories from photometric assessments. Thus the individual observer relies on his own judgment which soon becomes accurate, (to within one tenth of a magnitude, with practice).

It may be argued that this hardly comes under the heading of truly scientific work, but even so, at the end of any train of instruments, no matter how complex, stands a human being's five senses, his mental attitude, his training and his intellectual honesty.

The observations are treated statistically in ten-day means, whose resultant light curves are of sufficient accuracy for interpretation by professional astronomers.

It is necessarily work of a solitary nature, but few observers feel isolated, when a telephone call or a cable can put them into contact with a chain of events that ends in the furtherment of mankind's knowledge at the very frontiers of scientific research.

No one could ask for more valuable work than that. And the cost is little more than for any other form of recreational activity.

For anyone interested in joining the team of part-time astronomers I include the following references:-

TELESCOPES

Every Australian State has at least one Astronomical Society whose telephone number will be listed in the local book. For membership of these bodies will come a direct personal contact with other VS observers, and a good knowledge of the cost of telescopes either purchased or made by themselves.

VARIABLE STAR ASSOCIATIONS

British Astronomical Association. (VSS Section,) BAA.

American Association of Variable Star Observers. (AAVSO).

Royal Astronomical Society of New Zealand. (VSS Section)

Australian observers usually join the latter section and enquiries should be made to the Director, Mr. F.M. Bateson, FRAS. Address:

The Director, F.M. Bateson,

RASNZ (Variable Star Section,)

Box PO 3093, TAURANGA, NEW ZEALAND.

UFOs and Prophetic Religious Movements

by Mark Moravec

A prophetic religious movement is a system of beliefs and practices, held collectively by a group of people, which "formalizes the conception of the relation between man and his environment" (Winick's definition of religion, 1961, p.454) and predicts the renewal and improvement of the world at some forthcoming time. By examining three ethnographic examples of prophetic religious movements, I will present the evidence for the view that such movements have several common elements and are more than simply religious attempts to escape from reality based on misguided prophecies. Rather, the movements seem to emerge as a response to both certain social conditions and an "impulse" within

human consciousness pushing human beliefs in a definite direction to produce social change.

THE AMERICAN INDIAN GHOST DANCE MOVEMENT

The Ghost Dance religious movement of the North American Indians emerged with great impact in 1890 after a Paiute healing shaman called Wovoka ("the Cutter") had a vision of God who ordered him to establish the new movement.

"All Indians must dance, everywhere, keep on dancing. Pretty soon in next spring Great Spirit come....All dead Indians come back and live again....When Great Spirit comes this way, then all the Indians go to mountains....Then while Indians way up high, big flood comes like water and all white people die, get drowned. After that, water go way and then nobody but Indians everywhere and game all kinds thick." - Wovoka, the Paiute Messiah (Brown, 1970,p.416).

Despite the imprisonment of Ghost Dance prophets and persecution of their followers by the white men who thought the movement dangerous, it expanded to the most distant regions of the northwestern United States (Lanternari, 1963).

THE USURUFA CARGO CULT

The cargo cult of the Usurufa, who lived in the area around Kainantu in the eastern highlands of New Guinea, was investigated by Robert Berndt in the 1950s when contact between the Usurufa and Europeans had still been minimal. The first contact was in 1930 when the natives were initially terrified by the sight of aeroplanes but later believed "the white men inside the big mother bird were friendly spirits" (Christiansen, 1969,p.28).

Because the Europeans had red skins, they were not identified as men, but rather as spirits of the dead, returning with wealth in the form of quantities of European goods (cargo) which would be stored in the large warehouses the Usurufa had constructed. However, as the goods did not arrive as calculated, distrust of the Europeans grew (Christiansen, 1969). The movement peaked in 1947 between Mount Hagen and the Markham River and spread beyond, with periods of disappointment and depression following excited expectation (Lanternari, 1963).

THE "BAY CITY" UFO CULT

A modern counterpart is a movement which began in the 1950s in an industrialised city in the midwest of the U.S.A. A suburban housewife, "Mrs Marian Keech", received messages via automatic writing claimed to be sent by "superior beings from a planet called 'Clarion'. These beings have been visiting the earth, she says, in what we call flying saucers" (Festinger, Riecken and Schachter, 1964,p.30). Through Mrs Keech's network of friends, a movement of initially several dozen people gathered around her and became committed to the beliefs of the group's accumulating folklore. Possible objective, physical manifestations which occurred include the mysterious appearance and disappearance of a "stiff-legged entity" at a prophecised flying saucer landing.

The "Guardians", as the beings came to be known, gave the group teachings and advice about religious matters and cosmology, and predicted future events, the most important event being a flood which would submerge the city just before dawn on December 21, accompanied by a cataclysm which would submerge the West Coast of the Americas. Those people who drowned would be spiritually reborn on other planets appropriate to their spiritual development, but flying saucers would come down from the sky in time to save the believers from the Flood. Despite the fact that the disasters did not come to pass, the failed prediction reinforced the movement's conviction, because its members took credit for the avoidance of the destruction! The group only disbanded when the leaders were threatened with legal action and possible commitment to a mental hospital.

COMMON ELEMENTS

The above three prophetic religious movements share a number of common elements. They (1) were dissatisfied with the social conditions which they were forced to accept; (2) rejected established authority; (3) were initiated after a prophet received revelations and prophecies from a "higher being"; (4) these prophecies promised a new age of enlightenment and renewal for the world, a rebirth in paradise; and (5) were catalysed by individuals acting as leaders, prophet and/or messiah.

By 1890, Indian culture was rapidly declining due to the unjust takeover of land and violent expulsion of the Indians by the white man. Wovoka's claim that the promised land was only for the Indians openly paved the way for the Sioux uprising. In New Guinea, the Usurufa's brief contacts with Europeans revealed the comparative material disadvantage of the natives. According to

Christiansen (1969, p.108), the cargo cult is a "cult of wealth which does not merely embrace material goods, but also power, good fortune and fertility, etc., which has its roots in the traditional ideology." A study by Guiart and Worsley (Christiansen, 1969) found that, of 73 Melanesian cargo cults, only half had a belief in the cargo myth proper. In fact, according to this view, the cargo movements reflect more than an envious desire for European goods; they are a search for "spiritual cargo". The modern flying saucer movement was clearly unconcerned with material gain, refusing all offers of money. The cult members were unsatisfied with the social and spiritual conditions of modern, industrialised society. The Guardians communicated with Mrs. Keech to teach her and other humans "those principles, ideas and guides to right conduct that are necessary to advance the spiritual development of the human race..." (Festinger et al, 1964, p.45). The Usurufa cargo cult came to regard the Europeans as a threat to safety when the cargo failed to arrive, and rifles appeared in the villages. The flying saucer cult maintained its beliefs in the face of social pressure from the media and the legal authorities.

The revelations which initiated the movements all have a similar content. "God instructed Wovoka to command his people to work assiduously, not to steal, lie or fight, to love one another and to live at peace with the white man, even though they might still hope and pray for his disappearance from their midst" (Lanternari, 1963, p.152). The revelation promised the Indians the return of a Golden Age of plentiful buffalo and spiritual salvation. Through dreams and visions with the Spirits/Europeans, an era of freely available material and spiritual wealth was prophesied for those in the cargo movement. For those in the flying saucer movement, paradise was to be their spiritual rebirth on planets with a higher level of spiritual development. The ghost dance and cargo movements also promised the return to life of the dead ancestors. As these details show, all three movements include beliefs identical to some of the beliefs of Christianity. In fact, Wovoka was identified as the Son of God by the Mormons in 1892; and the most important Guardian, called Sananda, revealed himself to be the contemporary identity of Jesus Christ. Some Melanesian cargo cults constructed "telegraph stations" using dummy poles and "lines" of lianas to receive messages from Christ. Did these movements borrow Christian-like beliefs from the society they were rebelling against or did these beliefs evolve independently? It may be that the identity of Christ was incorporated into an independently evolved belief system which already included a Christ-like messianic role.

The "prophet" announces the forthcoming state of paradise, the "leader" directs the movement, and the "messiah" is believed able to make the millennial dream come true because of his divine powers (Christiansen, 1969). Wovoka, whose powers of healing were widely regarded, possessed all three roles and was probably a "charismatic" leader. Yet twenty years earlier in 1870, the prophet Wodziwob started the first version of the Ghost Dance after receiving a revelation emphasising the same major themes of the return of the dead, the catastrophic end of the world, and the regeneration of Indian life after the disappearance of the white man. Dr. Bendt's last survey of the Usurufa cargo cult in 1953 revealed the movement still existed, being kept alive by a succession of prophets. The flying saucer cult gained a second prophet when one of its members went into a fit and trance and relayed communications to the group from the "Creator".

What these details of a succession of prophets point out is that the role of the prophet/leader/messiah, no matter how charismatic he or she may be, is limited. Lanternari (1963) suggests there is a dialectical relationship between the prophets and certain sociological and cultural conditions. The individual prophet is not the sole cause of the movement, but a catalyst around which the group centres.

THEORIES OF CAUSATION

How do prophetic religious movements come about? Lanternari (1963) has suggested that many movements result from the clash between two cultures. The "less advanced" people may become aware of their economic and social lags and turn to the message of hope and salvation offered by the prophets (and it may well be European exploitation and oppression within the traditional context which promoted the search for an alternative). In contrast, Oosterwal (Christiansen, 1969) believes that in the case of the cargo cult, the movement is traditional.

It was only after the introduction of European goods that the concept of material cargo was incorporated into the belief system. Unless "we assume a completely static historical situation it is not unreasonable to suggest that movements rather like Cargo movements were occurring in Melanesia before the white man came there" (Burridge, cited in Christiansen, 1969). Thus, while a clash of cultures may emphasise material and social differences adding impetus to a movement, this clash may not be a basic cause of it. Studies of movements prior to substantial Western contact should support this conclusion, but few, if any, such isolated movements exist these days.

According to "deprivation" theory, the prophetic religious movement is only one of several responses to a state of deprivation - the despair caused by a dissatisfaction with present material and social reality when compared to the past or another culture (Barber, in Lessa and Vogt, 1972). However, this theory doesn't explain why the prophetic religious movement is the response in those situations in which it has manifested.

It has been suggested that dissatisfaction with economic conditions is the cause of the movements. According to Lawrence's (1964) study of a cargo cult in Medang, New Guinea, there was an obsession for cargo because of economic necessity and because it was an index of self-respect and status. This observation does not seem to generalise to other movements. Certainly the members of the flying saucer cult wanted nothing to do with material gain.

Vallee (1976) proposes that movements such as the flying saucer cult come into being in response to a mechanism, possibly within human consciousness, which is pushing human beliefs from a materialistic-orientated perspective to some level of higher awareness. This change in belief, in turn, produces cultural change. Applying Vallee's hypothesis to the cargo cults, there is on the surface a contradiction presented by the belief in cargo. However, if we accept the hypothesis presented earlier, the cargo belief extends beyond solely material goods, which may have been emphasised only after European contact with the accompanying appearance of Western goods. Perhaps our materialistic Western perspective has also over-emphasised the importance of material cargo in the cult belief system. The effect of prophetic religious movements is unambiguous: social change. Why is this social change positive or negative? The movements often function to unify traditionally separate and hostile groups as has occurred with New Guinea cargo cults in a defensive reaction against the Europeans. This greater solidarity leads to a more effective development of the society (Christiansen, 1969) Lanternari (1963) views the movements as positive and progressive - paving the way for reform in the cultural, political and social structure of society. Cohn (1961) views the movements as abnormal and negative and compares them to Hitler's Nazi movement. In any case many authors are guilty in assuming that cultural change must follow the same pattern as that of Euro-American society. Although individuals in a movement face persecution and disappointments, could an ultimate benefit lie in the impact of prophetic religious movements on human consciousness?

A CONCLUSION...

Prophetic religious movements are vehicles for cultural change. The basic causes are probably both internal and external - an impulse within human consciousness launching a "new" belief system in a situation where there is dissatisfaction with current social conditions. The movements are catalysed by successive prophets yet manifest a system of beliefs consistent over time and geography except for minor local variations according to the history and environment of the society.

Hence Prophecy is not merely a foresight of trouble or a gratuitous form of error, but the means by which an impact is made on the collective consciousness of the people, thereby leading to cultural change. The movements are not just religious attempts to escape from reality. Their myths and dreams are "not something that exists outside the world of reality, but represent a sort of truth and reality which, although differing from what we call reality, are not for that reason less true or less real..." (Burridge, cited in Christiansen, 1969, p.91)

...AND SOME QUESTIONS

Anthropologists and sociologists do not know everything about the movements we have been discussing. Our conclusions can only be tentative and several unresolved issues remain.

What is the nature of the "impulse" within human consciousness which might initiate the movements? Vallee (1976) thinks it originates from the "collective unconscious" - Jung's concept of a universal level of the human unconscious which is the residue of all our ancestral experiences. The potentialities of these ancestral or archaic images can enter consciousness as "thought-feelings" or archetypes: the irrational patterns of thought and primitive feelings found in dreams, visions and myths (Hadfield, 1974). According to this line of thought the UFO is an archetype (see Jung, 1969). Yet Jung's "collective unconscious" is merely a theoretical construct and quite possibly scientifically unprovable. The point is that we may be attempting to explain one unknown (the UFO) in terms of another (the archetype). (Similarly, no one has proved that extraterrestrial life exists).

It seems pretty certain that prophetic religious movements have always been around in one form or another. Specifically, will UFO cults continue appearing? As Jacobs (1975) relates, the 1950's saw the growth of hundreds of contactee and contactee-orientated clubs in the USA. The early 1970s bred a "new" type of contactee, such as Uri Geller, who claims possession of psychic powers derived from UFO contact experiences. It seems that the prophets of the flying saucer cults will be with us for quite some time.

Is the contactee experience separable from the remaining UFO picture? Alvin Lawson (1977) has been conducting some very interesting investigations of the reliability of hypnotic regression in CEIII cases. He suggests that UFO abduction cases have "a wholeness or integral quality (although details and duration vary) which differs from other close encounters" which are frequently interrupted by human intrusion. It could, and has been, argued that the "full-blown" religious contactee experience is different from the abduction cases (the latter being somehow more acceptable, especially to supporters of the extra-terrestrial hypothesis). Yet both the religious (willing?) contactees and the abduction contactees go for rides in "flying saucers", receive esoteric cosmic philosophies, and often subsequently experience seemingly parapsychical experiences. In any case, it is important to find out whether or not the contactee experience is qualitatively different from other (more physical?) UFO experiences, since a difference may imply multiple causation (despite Occam's Razor) or, at the very least, a multiple approach (physical and parapsychical) to solve the entire UFO mystery. (I use the term "parapsychical" to cover both psychological and apparently parapsychological events). In one sense, the UFO problem reminds me of the apparent paradox of the electron being both a particle and a wave. The UFO phenomenon, in totality, appears to be both physical and parapsychical. Any proposed solution of the UFO mystery cannot ignore either the physical events at Socorro or the parapsychical events experienced by Mrs. Keech and her followers.

But we must not forget the people who actually go through the prophetic religious experience. The prophets who receive their psychic revelations may undergo a personality change from ordinary people to those with the "inner glow" brought on by religious conversion. They and their followers are compelled to follow a radical and complete belief system. But this is often at the cost of personal distress and sometimes tragedy brought on by the experience itself and the subsequent persecution by the rest of society. In the movement centred around Mrs. Keech, several of the core members quit their jobs several weeks before the predicted disaster - which never occurred. One of the most highly educated in the movement, a local professor, was to say: "I've had to go a long way. I've given up just about everything. I've cut every tie. I've burned every bridge. I've turned my back on the world. I can't afford to doubt. I have to believe. And there isn't any other truth.... This is a tough time but we know that the boys upstairs are taking care of us." (Festinger et al, 1964).

Prophetic religious movements are not the delusions of "backward natives". They are occurring today, in our own "highly developed" society. At the height of the flying saucer cult, the members received literally hundreds of visitors, telephone calls and letters from seriously interested people. Their ideas were not without popular appeal.

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Are UFOs Impersonating the Perseids Meteors?

by John Prytz.

In following my daily lunch-time habit of scanning the journals received by the Commonwealth Library, I recently came across a very curious article - (Hapgood, M.A. & Rothwell, P. - "Fragmentation of a meteor in near-Earth Space" - Nature, 2 April 1981 - p.384-386.). The article relates the monitoring of the Perseid meteor shower on the morning of 12 August 1977. Two low-light level TV cameras had been set up, one each at Southampton and Harwell, both in the south of England. The authors concentrate on one rather interesting discovery. By sheer luck, the two cameras recorded three "meteoroids" which arrived on near parallel courses (to within 1 degree) and within 1.3 seconds of each other. Their velocities and radiants (determined by triangulation against fixed stellar background using observations from the two sites) did indeed lie close to mean Perseid values. However, this was contrasted to the average meteor rate in view of the cameras during the Perseid meteor shower, which was about 6 trackings per hour and spread over 12 degrees of night sky. Thus, the authors concluded that the probability of observing by chance three meteors arriving so close together in time and direction was about 3×10^{-11} . A better explanation had to be found. The authors proposed that the three Perseid meteors, caught in the act of ablating in the Earth's atmosphere, were really fragments of a single larger Perseid meteoroid (of mass 3×10^{-4} kg) which had suffered in a collision with a dust particle in near earth space. The mass of the parent object had been calculated from the masses of the individual three tracked meteors, which had been calculated from their apparent magnitudes (determined by comparing their brightness with the brightness of stars in the field of view), with the underlying assumptions of course that the objects were really composed of rock and not some other substance. This information coupled with assumed densities and parent object shape, yielded the approximate size of the parent and the cross-sectional area. That had to be known in order to estimate the probabilities of the proposed collision. The authors also could calculate the minimum distance from the Earth back to the breakup point, which yielded a distance of slightly over 1700 km, or well above the Earth's atmosphere (thus it wasn't a breakup of one object caused by stresses of Earth atmosphere entry). All of the above data calculations suggested that "a high velocity collision between the parent body and a small dust particle would be the likely cause of fragmentation". The authors were excited by this prospect as the chance of an individual meteor breaking up close to the Earth was of the order of a few in a million! However, the odds would improve during the time of a major meteor shower such as the Perseids in August. But how much better? The authors considered the probabilities of meteor collision (the

Perseid parent in question) with three scenarios (represented by classes of dust particles in near Earth space): interplanetary; magnetospheric; and, lunar ejecta. The values they arrived at were some 100,000 times better than the probability of random association between the three tracked objects! Impressive? Not really, for the improvement is still orders of magnitude below what one would start calling a sure thing! The odds for the Perseid parent/interplanetary dust collision are (according to the authors) about 3×10^{-6} (3 chances in a million); for a parent/magnetospheric dust collision, also 3×10^{-6} ; and for a parent/lunar ejecta dust collision scenario, an improbable 5×10^{-7} (5 chances in ten million). And even if one of the three scenarios did happen, what further are the odds it would happen at just the right time, in just the right location, to be recorded by two TV cameras, and give the authors (me included) something interesting to write about?

Let me suggest another scenario for what happened! Three extraterrestrial spaceships (ie: UFOs), under intelligent control (explaining their association in space and time), and under cover of the Perseid meteor shower (sneaky aliens - that's not playing the game fairly), infiltrated the sovereign airspace of our planet, in order to carry out some dastardly deed (no doubt) such as stealing our water, or mutilating our cattle, or scaring half to death some innocent motorist returning home on a dark isolated country road after a night out with the boys (or girls)! Is the probability of that idea any less? Any reports of a "close encounter" to hand for 12 August 1977?

ACUFOS BIBLIOGRAPHY SERVICE: EXTRATERRESTRIAL INTELLIGENCE (ETI)

(by John Prytz)

Compiler's Note: Many references have already been given on the topic of extraterrestrial life (ETL) in these bibliographies; without regard to defining it's nature: whether it be microbial or technologically advanced. It is time to introduce the word "intelligence" into the equation now. While the following references concentrate on this aspect, the dividing line between ETL (exobiology) and ETI is very fine, such that these references closely complement those which have gone before. Further, many of these articles touch upon the topics of the nature of first face-to-face contact with ETI, outer space law, theology, space colonization, ancient astronauts, UFO's, and SETI/CETI. The latter four topics are broad enough to warrant their own bibliographies; the first three of these having already been covered. The topic of SETI/CETI will be detailed in future issues.

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